SEQUENCE LISTING

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Spytek, Kimberly A

- <120> Novel Single Nucleotide Polymorphisms for Olfactory Receptor-like Polypeptides and Nucleic Acids Encoding the Same
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- <141> 2001-10-09
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  Ala Met Tyr Leu Val Thr Leu Leu Gly Asn Thr Ala Ile Met Ala Val
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- agc gtg cta gat atc cac ctg cac acg ccc gtg tac ttc ttc ctg ggc 250 Ser Val Leu Asp Ile His Leu His Thr Pro Val Tyr Phe Phe Leu Gly 50 55 60
- aad oto tot add otd gad ato tod tan acd och ach tit gid not otd . how

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_	_		_	atg Met	_	_	_	_		_	~ ~		_		_	394
			_	atc Ile		_		_	_		_	_		_	_	442
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_	_	_		ctg Leu 245	_	_		_								826
	_		_	aag Lys		_			_	-						874
_			•	ctc Leu		_	_	_	_		_	_				922
		-	_	agg Arq		_			_		-			_		970

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m eq}$ 

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ggtctcaggt tagtagctga ggccat

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Ala Met Tyr Leu Val Thr Leu Leu Gly Asn Thr Ala Ile Met Ala Val 35 40 45

Ser Val Leu Asp Ile His Leu His Thr Pro Val Tyr Phe Phe Leu Gly 50 55 60

Asn Leu Ser Thr Leu Asp Ile Cys Tyr Thr Pro Thr Phe Val Pro Leu 65 70 75 80

Met Leu Val His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Ala Val 85 90 95

Cys Ala Ile Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cys 100 105 110

Leu Leu Leu Ala Ile Thr Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Gln 115 120 125

Pro Leu Arg Tyr His Val Leu Met Ser His Arg Leu Cys Val Leu Leu 130 135 140

Met Gly Ala Ala Trp Val Leu Cys Leu Leu Lys Ser Val Thr Glu Met 145 150 155 160

Val Ile Ser Met Arg Leu Pro Phe Cys Gly His His Val Val Ser His
165 170 175

Phe Thr Cys Lys Ile Leu Ala Val Leu Lys Leu Ala Cys Gly Asn Thr 180 185 190

Ser Val Ser Glu Asp Phe Leu Leu Ala Gly Ser Ile Leu Leu Pro 195 200 205

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(2.3)

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tgt god atd dag atg tgt dtg add dtg the and dim the animal is man time.

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cca ctc agg tac cac gtg ctc atg agc cac cgg ctc tgc gtg ctg ct Pro Leu Arg Tyr His Val Leu Met Ser His Arg Leu Cys Val Leu Le 130 135 140	
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ttc atg tac ttg aag ccc aag agt aag gaa gcc cac atc tct gat ga Phe Met Tyr Leu Lys Pro Lys Ser Lys Glu Ala His Ile Ser Asp Gl 260 265 270	
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tgg ggc agg agt cgg gcc tcc agg tgagggaggg cggggctctg tacagacg Trp Gly Arg Ser Arg Ala Ser Arg 305 310	gca 1024
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Ser Val Leu Asp Ile His Leu His Thr Pro Val Tyr Phe Phe Leu Gly
50 55 60

Asn Leu Ser Thr Leu Asp Ile Cys Tyr Thr Pro Thr Phe Val Pro Leu 65 70 75 80

Met Leu Val His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Ala Val

Cys Ala Ile Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cys 100 105 110

Leu Leu Leu Ala Ile Thr Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Gln
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Pro Leu Arg Tyr His Val Leu Met Ser His Arg Leu Cys Val Leu Leu 130 135 140

Met Gly Ala Ala Trp Val Leu Cys Leu Leu Lys Ser Val Thr Glu Met 145 150 155 160

Val Ile Ser Met Arg Leu Pro Phe Cys Gly His His Val Val Ser His
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Phe Thr Cys Lys Ile Leu Ala Val Leu Lys Leu Ala Cys Gly Asn Thr 180 185 190

Ser Val Ser Glu Asp Phe Leu Leu Ala Gly Ser Ile Leu Leu Pro 195 200 205

Val Pro Leu Ala Phe Ile Cys Leu Ser Tyr Leu Leu Ile Leu Ala Thr 210 215 220

Ile Leu Arg Val Pro Ser Ala Ala Arg Cys Cys Lys Ala Phe Ser Thr 225 230 235 240

Cys Leu Ala His Leu Ala Val Val Leu Leu Phe Tyr Gly Thr Ile Ile

Phe Met Tyr Leu Lys Pro Lys Ser Lys Glu Ala His Ile Ser Asp Glu
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aat ggg gtc ctc atc ctg gtg acc atc ctt gac tcc cgc ctg cac acg 195 Asn Gly Val Leu Ile Leu Val Thr Ile Leu Asp Ser Arg Leu His Thr 45 50 55

ccc atg tac ttc ttc cta ggg aac ctc tcc ttc ctg gac atc tgc ttc 243
Pro Met Tyr Phe Phe Leu Gly Asn Leu Ser Phe Leu Asp Ile Cys Phe
60 65 70

act acc tcc tca gtc cca ctg gtc ctg gac agc ttt ttg act ccc cag 291
Thr Thr Ser Ser Val Pro Leu Val Leu Asp Ser Phe Leu Thr Pro Gln
75 80 85 90

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Glu Thr Ile Ser Phe Ser Ala Cys Ala Val Gln Met Ala Leu Ser Phe
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140 145 150

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Gly Asp Asn Val I		tgt gag att ctg gct Cys Glu Ile Leu Ala 180	_
3 3 3 3	-	aat gtg atc agc atg Asn Val Ile Ser Met 200	
J J J	JJ J	gtt ctg ttc atc tct Val Leu Phe Ile Ser 215	
_	_	agg atc ccc tca gct Arg Ile Pro Ser Ala 230	3 3 333
J J J	•	gcc cac ctc acc gtg Ala His Leu Thr Val 245	
Val Phe Tyr Gly T	_	tat ggg aag cct aag Tyr Gly Lys Pro Lys 260	
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  65 70 75 80
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- Ala Cys Ala Val Gln Met Ala Leu Ser Phe Ala Met Ala Gly Thr Glu 100 105 110
- Cys Leu Leu Ser Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys 115 120 125
- Asn Pro Leu Arg Tyr Ser Val Ile Met Ser Lys Ala Ala Tyr Met Pro 130 135 140
- Met Ala Ala Ser Ser Trp Ala Ile Gly Gly Ala Ala Ser Val Val His 145 150 155 160
- Thr Ser Leu Ala Ile Gln Leu Pro Phe Cys Gly Asp Asn Val Ile Asn 165 170 175
- His Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp 180 185 190
- Ile Ser Ile Asn Val Ile Ser Met Glu Val Thr Asn Val Ile Phe Leu 195 200 205
- Gly Val Pro Val Leu Phe Ile Ser Phe Ser Tyr Val Phe Ile Ile Thr 210 215 220
- Thr Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Val Phe Ser 225 230 235 240
- Thr Cys Ser Ala His Leu Thr Val Val Ile Val Phe Tyr Gly Thr Leu 245 250 255
- Phe Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Ser Met Gly Ala Asp 260 265 270
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					aga Arg											106
					gcc Ala											154
					acc Thr											202
_			_		cac His	-		_						_		250
					gac Asp 70											298
_	_	_			ctg Leu				_					_	_	346
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					acg Thr											442
					gtg Val											490
					gtc Val 150											538
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165 170 175

1

ttc acc tgc aag atc ctg gca gtg ctg aag ctg gca tgc ggc aac acg 634 Phe Thr Cys Lys Ile Leu Ala Val Leu Lys Leu Ala Cys Gly Asn Thr 180 185 teg gte age gaa gae tte etg etg geg gge tee ate etg etg eet 682 Ser Val Ser Glu Asp Phe Leu Leu Ala Gly Ser Ile Leu Leu Pro 200 gta ccc ctg gca ttc atc tgc ctg tcc tac ttg ctc atc ctg gcc acc 730 Val Pro Leu Ala Phe Ile Cys Leu Ser Tyr Leu Leu Ile Leu Ala Thr 210 215 atc ctg agg gtg ccc tcg gcc gcc agg tgc tgc aaa gcc ttc tcc acc 778 Ile Leu Arg Val Pro Ser Ala Ala Arg Cys Cys Lys Ala Phe Ser Thr tgc ttg gca cac ctg gct gta gtg ctg ctt ttc tac ggc acc atc atc 826 Cys Leu Ala His Leu Ala Val Val Leu Leu Phe Tyr Gly Thr Ile Ile 245 ttc atg tac ttg aag ccc aag agt aag gaa gcc cac atc tct gat gag 874 Phe Met Tyr Leu Lys Pro Lys Ser Lys Glu Ala His Ile Ser Asp Glu 265 qtc ttc aca qtc ctc tat gcc atg gtc acg acc atg ctg aac ccc acc Val Phe Thr Val Leu Tyr Ala Met Val Thr Thr Met Leu Asn Pro Thr 280 285 275 atc tac agc ctg agg aac aag gag gtg aag gag gcc gcc agg aag gtg 970 Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys Glu Ala Ala Arg Lys Val 295 290 300 tgg ggc agg agt cgg gcc tcc agg tgagggaggg cggggctctg tacagacgca Trp Gly Arg Ser Arg Ala Ser Arg 305 310 ggtctcaggt tagtagctga ggccat 1050 <210> 8 <211> 312 <212> PRT <213> Homo sapiens <400> 8 Met Glu Pro Leu Asn Arg Thr Glu Val Ser Glu Phe Phe Leu Lys Gly 5 Phe Ser Gly Tyr Pro Ala Leu Glu His Leu Leu Phe Pro Leu Cys Ser

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Ala Met Tvr Leu Val Thr Leu Leu Cly Ash Thr Ala Tle Met Ala Th

25

20

50 55 60

Asn Leu Ser Thr Leu Asp Ile Cys Tyr Thr Pro Thr Phe Val Pro Leu 70 75 Met Leu Val His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Ala Val 90 Cys Ala Ile Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cys 105 Leu Leu Leu Ala Ile Thr Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Gln 120 Pro Leu Arg Tyr His Val Leu Met Ser His Arg Leu Cys Val Leu Leu 135 Met Gly Ala Ala Trp Val Leu Cys Leu Lys Ser Val Thr Glu Met 150 155 Val The Ser Met Arg Leu Pro Phe Cys Cly His His Val Val Ser His 165 Phe Thr Cys Lys Ile Leu Ala Val Leu Lys Leu Ala Cys Gly Asn Thr 185 Ser Val Ser Glu Asp Phe Leu Leu Ala Gly Ser Ile Leu Leu Pro 200 Val Pro Leu Ala Phe Ile Cys Leu Ser Tyr Leu Leu Ile Leu Ala Thr 215 Ile Leu Arg Val Pro Ser Ala Ala Arg Cys Cys Lys Ala Phe Ser Thr 230 235 Cys Leu Ala His Leu Ala Val Val Leu Leu Phe Tyr Gly Thr Ile Ile 245 Phe Met Tyr Leu Lys Pro Lys Ser Lys Glu Ala His Ile Ser Asp Glu 265 Val Phe Thr Val Leu Tyr Ala Met Val Thr Thr Met Leu Asn Pro Thr 275 280 Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys Glu Ala Ala Arg Lys Val Trp Gly Arg Ser Arg Ala Ser Arg

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Met Glu Pro Leu Asn Arg Thr Glu Val Ser Glu Phe Phe Leu Lys Gl 1	c 58	cagc	tctg	aac '	tcaga	tcti	catc	ggac	t gt	cagc	atcc	cc ca	tect	tete	ccc 1		
Phe Ser Gly Tyr Pro Ala Leu Glu His Leu Leu Phe Pro Leu Cys Se 20 25 30 30 Sequence Company Sequence Cys Sequ			Lys					Ser					Asn				Met
Ala Met Tyr Leu Val Thr Leu Leu Gly Asn Thr Ala Ile Met Ala Va 35				Leu					His					Tyr			
Ser Val Leu Asp Ile His Lou His Thr Pro Val His Phe Phe Leu Gl 50 55 60  aac ctc tct acc ctg gac atc tgc tac acg ccc acc ttt gtg cct ct Asn Leu Ser Thr Leu Asp Ile Cys Tyr Thr Pro Thr Phe Val Pro Le 65 70 75 8  atg ctg gtc cac ctc ctg tca tcc cgg aag acc atc tcc ttt gct gt Met Leu Val His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Ala Va 85 90 95  tgt gcc atc cag atg tgt ctg agc ctg tcc acg ggc tcc acg gag tg Cys Ala Ile Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cy 100 105 110					Ile					Leu					Tyr		
Asn Leu Ser Thr Leu Asp Ile Cys Tyr Thr Pro Thr Phe Val Pro Le 70 70 75 8  atg ctg gtc cac ctc ctg tca tcc cgg aag acc atc tcc ttt gct gt Met Leu Val His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Ala Va 85 90 95  tgt gcc atc cag atg tgt ctg agc ctg tcc acg ggc tcc acg gag tg Cys Ala Ile Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cy 100 100 110			_			His					Lcu			_		Val	
Met Leu Val His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Ala Va 85 90 95 tgt gcc atc cag atg tgt ctg agc ctg tcc acg ggc tcc acg gag tg Cys Ala Ile Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cy . 100 105 110	u						Pro					Asp					Asn
Cys Ala Ile Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cy · 100 105 110			Ala					Lys				_	Leu		_	_	_
		_		Thr			_		Leu	_	_	_	_	Gln		_	_
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gtc atc tcc atg agg ctg ccc ttc tgt ggc cac cac gtg gtc agt ca Val Ile Ser Met Arg Leu Pro Phe Cys Gly His His Val Val Ser Hi 165 170 175			Ser					Gly	_			_	Arg	_			_
ttc acc tgc aag atc ctg gca gtg ctg aag ctg gca tgc ggc aac acc Phe Thr Cys Lys Ile Leu Ala Val Leu Lys Leu Ala Cys Gly Asn Th				Gly					Leu					Lys			
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€ € € €

75

Ser Val Leu Asp Ile His Leu His Thr Pro Val His Phe Phe Leu Gly

Asn Leu Ser Thr Leu Asp Ile Cys Tyr Thr Pro Thr Phe Val Pro Leu

Cys Ala Ile Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cys
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Val Pro Leu Ala Phe Ile Cys Leu Ser Tyr Leu Leu Ile Leu Ala Thr 210 215 220

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			_	_		ctg Leu 80				_	_			_	_	293
		_		-	_	aga Arg	_								_	341
-		_	_		_	gca Ala										389
	_	_				tat Tyr										437
			_			atg Met	_		_	_	_			_		485
_	_				_	gca Ala 160									-	533
		_				ttc Phe										581
						ttg Leu										629
						tat Tyr										677
																17.0

tot off got got ata ofg god too tat analoga att of a ofg ant at a con-

	_				gag Glu 240				_				773
					gtt Val								821
_	_	_		-	tcc Ser		_		_		_		869
	_				att Ile	_		_	_				917
					gag Glu								965
		_	_		gca Ala 320		_		tagg	ÿġāas	yya		1008

<210> 12 <211> 324 <212> PRT

<213> Homo sapiens

<400> 12

Met Glu Leu Trp Asn Tyr His Ser Met Glu Leu Trp Asn Phe Thr Leu 1 5 10 15

Gly Ser Gly Phe Ile Leu Val Gly Ile Leu Asn Asp Ser Gly Ser Pro 20 25 30

Glu Leu Cys Ala Thr Ile Thr Ile Leu Tyr Leu Leu Ala Leu Ile 35 40 45

Ser Asn Gly Leu Leu Leu Ala Ile Thr Met Glu Ala Arg Leu His 50 55 60

Met Pro Met Tyr Leu Leu Gly Gln Leu Ser Leu Met Asp Leu Leu 65 70 75 80

Phe Thr Ser Val Val Thr Pro Lys Ala Leu Ala Asp Phe Leu Arg Arg 85 90 95

Glu Asn Thr Ile Ser Phe Gly Gly Cys Ala Leu Gln Met Phe Leu Ala 100 105 110

Leu Thr Met Gly Gly Ala Glu Asp Leu Leu Leu Ala Phe Met Ala Tyr

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150 155 Ser Leu Ser Ala Leu Ile Tyr Thr Val Tyr Thr Met His Tyr Pro Phe Cys Arg Ala Gln Glu Ile Arg His Leu Leu Cys Glu Ile Pro His Leu Leu Lys Leu Ala Cys Ala Asp Thr Ser Arg Tyr Glu Leu Met Val Tyr 200 Val Met Gly Val Thr Phe Leu Ile Pro Ser Leu Ala Ala Ile Leu Ala 215 Ser Tyr Thr Gln Ile Leu Leu Thr Val Leu His Met Pro Ser Asn Glu Gly Arg Lys Lys Ala Leu Val Thr Cys Ser Ser His Leu Thr Val Val 250 245 Gly Met Phe Tyr Gly Ala Ala Thr Phe Met Tyr Val Leu Pro Ser Ser Phe His Ser Thr Arg Gln Asp Asn Ile Ile Ser Val Phe Tyr Thr Ile 280 Val Thr Pro Ala Leu Asn Pro Leu Ile Tyr Ser Leu Arg Asn Lys Glu 290 295 Val Met Arg Ala Leu Arg Arg Val Leu Gly Lys Tyr Met Leu Pro Ala 305 310 315 His Ser Thr Leu <210> 13 <211> 1008 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (27)..(998) <400> 13 agetggagat etggaactte cacage atg gag ete tgg aac tac cac age atg 53 Met Glu Leu Trp Asn Tyr His Ser Met

Ser Ser Arg Ala Cys Trp Leu Met Val Ala Thr Ser Trp Ile Leu Ala

gag oto too aan the are the deal act one the att the dhe deal att

											gct Ala					149
											ctg Leu					197
	_	_	_				_		_		ctc Leu	_			_	245
			_	_		-				_	gtc Val 85			_	_	293
											tcc Ser					341
Ala	Leu	Gln	Met	Phe 110	Leu	Ala	Leu	Thr	Met 115	Gly	ggt Gly	Ala	Glu	Asp 120	Leu	389
Leu	Leu	Ala	Phe 125	Met	Āla	Tyr	Asp	Arg 130	Tyr	Val	gcc Ala	Ile	Cys 135	His	Pro	437
Leu	Thr	Tyr 140	Met	Thr	Leu	Met	Ser 145	Ser	Arg	Āla	tgc Cys	Trp 150	Leu	Met	Val	485
Ala	Thr 155	Ser	Trp	Ile	Leu	Ala 160	Ser	Leu	Ser	Ala	cta Leu 165	Ile	Tyr	Thr	Val	533
Tyr 170	Thr	Met	His	Tyr	Pro 175	Phe	Cys	Arg	Ala	Gln 180	gag Glu	Ile	Arg	His	Leu 185	581
Leu	Cys	Glu	Ile	Pro 190	His	Leu	Leu	Lys	Leu 195	Ala	tgt Cys	Āla	Āsp	Thr 200	Ser	629
Arg	Tyr	Glu	Leu 205	Met	Val	Tyr	Val	Met 210	Gly	Val	acc	Phe	Leu 215	Ile	Pro	677
Ser	Leu	Ala 220	Ala	Ile	Leu	Ala	Ser 225	Tyr	Thr	Gln	Ile	Leu 230	Leu	Thr	Val	725
											gcc Ala					773

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in the case typing graphet ggg aty the tal gga get ged acality of more

Ser 250	Ser	His	Leu	Thr	Val 255	Val	Gly	Met	Phe	Tyr 260	Gly	Ala	Ala	Thr	Phe 265	
_		-	_		_	tcc Ser			_		_		_			869
		_				att Ile	_			_	_					917
	_	-	-			gag Glu										965
			_	_		gca Ala 320			_		tagg	ggaag	gga			1008
<211 <212	0> 14 l> 32 2> PF B> Ho	24	sapie	ens												
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Met 1	Glu	Leu	Trp	Asn 5	Tyr	His	Ser	Met	Glu 10	Leu	Trp	Asn	Phe	Thr 15	Leu	
Gly	Ser	Gly	Phe 20	Ile	Leu	Val	Gly	Ile 25	Leu	Asn	Asp	Ser	Gly 30	Ser	Pro	
Glu	Leu	Leu 35	Cys	Ala	Thr	Ile	Thr 40	Ile	Leu	Tyr	Leu	Leu 45	Ala	Leu	Ile	
Ser	Asn 50	Gly	Leu	Leu	Leu	Leu 55	Ala	Ile	Thr	Met	Glu 60	Ala	Arg	Leu	His	
Met 65	Pro	Met	Tyr	Leu	Leu 70	Leu	Gly	Gln	Leu	Ser 75	Leu	Met	Asp	Leu	Leu 80	
Phe	Thr	Ser	Val	Val 85	Thr	Pro	Lys	Ala	Leu 90	Ala	Asp	Phe	Leu	Arg 95	Arg	
Glu	Asn	Thr	Ile 100	Ser	Phe	Gly	Gly	Cys 105	Ala	Leu	Gln	Met	Phe 110	Leu	Ala	
Leu	Thr	Met 115	Gly	Gly	Ala	Glu	Asp 120	Leu	Leu	Leu	Ala	Phe 125	Met	Ala	Tyr	
Asp																

(t<sup>t</sup>)

or sea ser what sea the tyr intovar by: The Met His Tyr Pro Phe

Ser Ser Ard Ala Cus Tro len Met Mal Bla The Con Ter The Lon Bla

165 170 1

Cys Arg Ala Gln Glu Ile Arg His Leu Leu Cys Glu Ile Pro His Leu 180 185 190

Leu Lys Leu Ala Cys Ala Asp Thr Ser Arg Tyr Glu Leu Met Val Tyr 195 200 205

Val Met Gly Val Thr Phe Leu Ile Pro Ser Leu Ala Ala Ile Leu Ala 210 215 220

Ser Tyr Thr Gln Ile Leu Leu Thr Val Leu His Met Pro Ser Asn Glu 225 230 235 240

Gly Arg Lys Lys Ala Leu Val Thr Cys Ser Ser His Leu Thr Val Val 245 250 255

Gly Met Phe Tyr Gly Ala Ala Thr Phe Met Tyr Val Leu Pro Ser Ser 260 265 270

Phe His Scr Thr Arg Gln Asp Asn Ile Ile Ser Val Phe Tyr Thr Ile 275 280 285

Val Thr Pro Ala Leu Asn Pro Leu Ile Tyr Ser Leu Arg Asn Lys Glu 290 295 300

Val Met Arg Ala Leu Arg Arg Val Leu Gly Lys Tyr Met Leu Pro Ala 305 310 315 320

His Ser Thr Leu

<210> 15

10

<211> 916

<212> DNA

<213> Mus musculus

<400> 15

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ritadadirtaki intintor

<210> 16

<211> 312

<212> PRT

<213> Mus musculus

<400> 16

Met Glu Pro Ser Asn Arg Thr Ala Val Ser Glu Phe Val Leu Lys Gly
1 5 10 15

Phe Ser Gly Tyr Pro Ala Leu Glu Arg Leu Leu Phe Pro Leu Cys Ser 20 25 30

Val Met Tyr Leu Val Thr Leu Leu Gly Asn Thr Ala Ile Val Ala Val 35 40 45

Ser Met Leu Asp Ala Arg Leu His Thr Pro Met Tyr Phe Phe Leu Gly 50 55 60

Asn Leu Ser Ile Leu Asp Ile Cys Tyr Thr Ser Thr Phe Val Pro Leu 65 70 75 80

Met Leu Val His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Thr Gly 85 90 95

Cys Ala Val Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cys
100 105 110

Leu Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Gln 115 120 125

Pro Leu Arg Tyr Pro Val Leu Met Ser His Arg Leu Cys Leu Met Leu 130 135 140

Ala Gly Ala Ser Trp Val Leu Cys Leu Phe Lys Ser Val Ala Glu Thr 145 150 155 160

Val Ile Ala Met Arg Leu Pro Phe Cys Gly His His Val Ile Arg His
165 170 175

Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Thr Cys Gly Asp Thr 180 185 190

Ser Val Ser Asp Ala Phe Leu Leu Val Gly Ala Ile Leu Leu Leu Pro 195 200 205

Ile Pro Leu Thr Leu Ile Cys Leu Ser Tyr Met Leu Ile Leu Ala Thr 210 215 220

Ile Leu Arg Val Pro Ser Ala Thr Gly Arg Ser Lys Ala Phe Ser Thr 225 230 235 240

Cys Ser Ala His Leu Ala Val Val Leu Leu Phe Tyr Ser Thr Ile Ile

265

..60

270

22

Val Phe Thr Val Leu Tyr Ala Val Val Thr Pro Met Leu Asn Pro Ile 275 280 285

Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys Glu Ala Ala Arg Lys Ala 290 295 300

Trp Gly Ser Arg Trp Ala Cys Arg 305 310

<210> 17

<211> 162

<212> PRT

<213> Macaca sylvanus

<400> 17

Pro Ala Ile Cys Gln Pro Leu Arg Tyr Arg Val Leu Met Asn His Arg 1 5 10 15

Leu Cys Val Leu Leu Val Gly Ala Ala Trp Val Leu Cys Leu Leu Lys
20 25 30

Ser Val Thr Glu Thr Val Ile Ala Met Arg Leu Pro Phe Cys Gly His  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

His Val Val Ser His Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu 50 55 60

Thr Cys Gly Asn Thr Ser Val Ser Glu Val Phe Leu Leu Val Gly Ser 65 70 75 80

Ile Leu Leu Pro Val Pro Leu Ala Phe Ile Cys Leu Ser Tyr Leu 85 90 95

Leu Ile Leu Ala Thr Ile Leu Arg Val Pro Ser Ala Ala Gly Cys Arg
100 105 110

Lys Ala Phe Ser Thr Cys Ser Ala His Leu Ala Val Val Leu Leu Phe 115 120 125

Tyr Ser Thr Ile Ile Phe Thr Tyr Met Lys Pro Lys Ser Lys Glu Ala 130 135 140

His Ile Ser Asp Glu Val Phe Thr Val Leu Tyr Ala Met Val Thr Pro 145 150 155 160

Met Leu

<210> 18

<211> 312

<2125 PPT

Met Glu Pro Ser Asn Arg Thr Ala Val Ser Glu Phe Val Leu Lys Gly Phe Ser Gly Tyr Pro Ala Leu Glu Arg Leu Leu Phe Pro Leu Cys Ser Val Met Tyr Leu Val Thr Leu Leu Gly Asn Thr Ala Ile Val Ala Val 40 Ser Met Leu Asp Ala Arg Leu His Thr Pro Met Tyr Phe Phe Leu Gly Asn Leu Ser Ile Leu Asp Ile Cys Tyr Thr Ser Thr Phe Val Pro Leu Met Leu Val His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Thr Gly Cys Ala Val Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cys 100 105 Leu Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Gln 120 Pro Leu Arg Tyr Pro Val Leu Met Ser His Arg Leu Cys Leu Met Leu 135 Ala Gly Ala Ser Trp Val Leu Cys Leu Phe Lys Ser Val Ala Glu Thr 150 155 Val Ile Ala Met Arg Leu Pro Phe Cys Gly His His Val Ile Arg His 165 170 Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Thr Cys Gly Asp Thr 180 185 Ser Val Ser Asp Ala Phe Leu Leu Val Gly Ala Ile Leu Leu Pro 200 Ile Pro Leu Thr Leu Ile Cys Leu Ser Tyr Met Leu Ile Leu Ala Thr 210 Ile Leu Arg Val Pro Ser Ala Thr Gly Arg Ser Lys Ala Phe Ser Thr 230 235 Cys Ser Ala His Leu Ala Val Val Leu Leu Phe Tyr Ser Thr Ile Ile 245 250 Phe Met Tyr Met Lys Pro Lys Ser Lys Glu Ala Arg Ile Ser Asp Gln

Val Phe Thr Val Leu Tyr Ala Val Val Thr Pro Met Leu Asn Pro Ile 275 280 285

, h /

Trp Gly Ser Arg Trp Ala Cys Arg 305 310

<210> 19

<211> 305

<212> PRT

<213> Rattus norvegicus

The first of the second section of the section of the second section of the section of the

<400> 19

Leu Leu Gly Leu Ser Gly Tyr Pro Lys Thr Glu Ile Leu Tyr Phe
1 5 10 15

Val Ile Val Leu Val Met Tyr Leu Val Ile His Thr Gly Asn Gly Val
20 25 30

Leu Ile Ile Ala Ser Ile Phe Asp Ser His Leu His Thr Pro Met Tyr 35 40 45

Phe Phe Leu Gly Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser 50 55 60

Ser Val Pro Ser Thr Leu Val Ser Leu Ile Ser Lys Lys Arg Asn Ile 65 70 75 80

Ser Phe Ser Gly Cys Thr Val Gln Met Phe Val Gly Phe Ala Met Gly 85 90 95

Ser Thr Glu Cys Leu Leu Gly Met Met Ala Phe Asp Arg Tyr Val 100 105 110

Ala Ile Cys Asn Pro Leu Arg Tyr Ser Val Ile Met Ser Lys Glu Val 115 120 125

Tyr Val Ser Met Ala Ser Ala Ser Trp Phe Ser Gly Gly Ile Asn Ser 130 135 140

Val Val Gln Thr Ser Leu Ala Met Arg Leu Pro Phe Cys Gly Asn Asn 145 150 155 160

Val Ile Asn His Phe Thr Cys Glu Val Leu Ala Val Leu Lys Leu Ala 165 170 175

Cys Ala Asp Ile Ser Leu Asn Ile Val Thr Met Val Ile Ser Asn Met 180 185 190

Ala Phe Leu Val Leu Pro Leu Leu Leu Ile Phe Phe Ser Tyr Val Leu 195 200 205

Ile Leu Tyr Thr Ile Leu Arg Met Asn Ser Ala Ser Gly Arg Arg Lys 210 215 220

Ala Phe Ser Thr Cys Ser Ala His Leu Thr Val Val Val Ile Phe Tyr

255

ر را <u>.</u> .

Gly Lys Asp Lys Phe Gln Thr Ser Asp Lys Ile Ile Ser Leu Phe Tyr 260 265 270

Gly Val Val Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn 275 280 285

Lys Asp Val Lys Ala Ala Val Lys Tyr Ile Leu Lys Gln Lys Tyr Ile 290 295 300

Pro 305

<210> 20

<211> 309

<212> PRT

<213> Homo sapiens

<400> 20

Met Gly Phe Val Lou Leu Arg Leu Ser Ala His Pro Glu Leu Glu Lys
1 5 10 15

Thr Phe Phe Val Leu Ile Leu Leu Met Tyr Leu Val Ile Leu Leu Gly
20 25 30

Asn Gly Val Leu Ile Leu Val Thr Ile Leu Asp Ser Arg Leu His Thr 35 40 45

Pro Met Tyr Phe Phe Leu Gly Asn Leu Ser Phe Leu Asp Ile Cys Phe 50 55 60

Thr Thr Ser Ser Val Pro Leu Val Leu Asp Ser Phe Leu Thr Pro Gln 65 70 75 80

Glu Thr Ile Ser Phe Ser Ala Cys Ala Val Gln Met Ala Leu Ser Phe 85 90 95

Ala Met Ala Gly Thr Glu Cys Leu Leu Ser Met Met Ala Phe Asp 100 105 110

Arg Tyr Val Ala Ile Cys Asn Pro Leu Arg Tyr Ser Val Ile Met Ser 115 120 125

Lys Ala Ala Tyr Met Pro Met Ala Ala Ser Ser Trp Ala Ile Gly Gly
130 135 140

Ala Ala Ser Val Val His Thr Ser Leu Ala Ile Gln Leu Pro Phe Cys 145 150 155 160

Gly Asp Asn Val Ile Asn His Phe Thr Cys Glu Ile Leu Ala Val Leu 165 170 175

Lys Leu Ala Cys Ala Asp the Conthe Ametric the contmet of the

um Ash lature the bed Sry lar fro Val Leu Fne ite Ser Pne Ser

195 200 205 Tyr Val Phe Ile Ile Thr Thr Ile Leu Arg Ile Pro Ser Ala Glu Gly 215 220 Arg Lys Lys Val Phe Ser Thr Cys Ser Ala His Leu Thr Val Val Ile 225 230 235 Val Phe Tyr Gly Thr Leu Phe Phe Met Tyr Gly Lys Pro Lys Ser Lys 250 Asp Ser Met Gly Ala Asp Lys Glu Asp Leu Ser Asp Lys Leu Ile Pro 265 Leu Phe Tyr Gly Val Val Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser 280 Leu Arg Asn Lys Asp Val Lys Ala Ala Val Arg Arg Leu Leu Arg Pro 2.95 300

Lys Cly Phe Thr Gln 305

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<400> 21

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<210> 22 <211> 227 <212> PRT <213> Pattus porvegicus

Der Ash beu ser ihne beu Aspirie dys Tyr Ihn Thr Ser Ser Val Pro-

1 5 10 15

Leu Ile Leu Gly Ser Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser 20 25 30

Gly Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu 35 40 45

Cys Val Leu Leu Ser Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys 50 55

Asn Pro Leu Arg Tyr Pro Val Val Met Ser Lys Ala Val Tyr Val Pro 65 70 75 80

Met Ala Thr Gly Ser Trp Ala Ala Gly Ile Ala Ala Ser Leu Val Gln
85 90 95

Thr Ser Leu Ala Met Arg Leu Pro Phe Cys Gly Asp Asn Val Ile Asn 100 105 110

His Phe Thr Cys Clu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp 115 120 125

Ile Ser Ile Asn Ile Ile Ser Met Gly Val Thr Asn Val Ile Phe Leu 130 135 140

Gly Val Pro Val Leu Phe Ile Ser Phe Ser Tyr Ile Phe Ile Leu Ser 145 150 155 160

Thr Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser 165 170 175

Thr Cys Ser Ala His Leu Thr Val Val Ile Val Phe Tyr Gly Thr Ile 180 185 190

Leu Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp 195 200 205

Lys Gln Asp Pro Ala Asp Lys Leu Ile Ser Leu Phe Tyr Gly Val Leu 210 215 220

Thr Pro Met

<210> 23

<211> 319

<212> PRT

<213> Mus musculus

<400> 23

Met Asp Arg Ser Asn Glu Thr Ala Pro Leu Ser Gly Phe Ile Leu Leu 1 5 10 Leu Met Met Tyr Leu Val Ile Leu Leu Gly Asn Gly Val Leu Ile Leu 35 40 45

J. 0

Val Ser Ile Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu 50 55 60

Gly Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Val Pro 65 70 75 80

Leu Ile Leu Asp Ser Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser 85 90 95

Gly Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu 100 105 110

Cys Val Leu Leu Ser Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys 115 120 125

Asn Pro Leu Arg Tyr Pro Val Val Met Asn Lys Ala Ala Tyr Val Pro 130 135 140

Met Ala Ala Ser Ser Trp Ala Gly Gly Ile Thr Asn Ser Val Val Gln 145 150 155 160

Thr Ser Leu Ala Met Arg Leu Pro Phe Cys Gly Asp Asn Val Ile Asn 165 170 175

His Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp 180 185 190

Ile Ser Ile Asn Val Ile Ser Met Val Val Ala Asn Met Ile Phe Leu 195 200 205

Ala Val Pro Val Leu Phe Ile Phe Val Ser Tyr Val Phe Ile Leu Val 210 215 220

Thr Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser 225 230 235 240

Thr Cys Ser Ala His Leu Thr Val Val Leu Val Phe Tyr Gly Thr Ile
245 250 255

Leu Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp 260 265 270

Lys Gln Asp Leu Ala Asp Lys Leu Ile Ser Leu Phe Tyr Gly Val Val 275 280 285

Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val 290 295 300

Arg Ala Ala Val Arg Asn Leu Val Gly Gln Lys His Leu Thr Glu 305 310 315

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cttcgctgac cgacgtgtt